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(71) Applicants and

(72) Inventors: ALLNUTT, F., C., Thomas [US/US]; 14692 Mustang Path, Glenwood, MD 21738 (US). KYLE, David, J. [US/US]; 1801 Narberth Road, Catonsville, MD 21228 (US).

(74) Agent: GARRETT, Arthur, S.; Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., 1300 I Street, Washington, DC 20005 (US).

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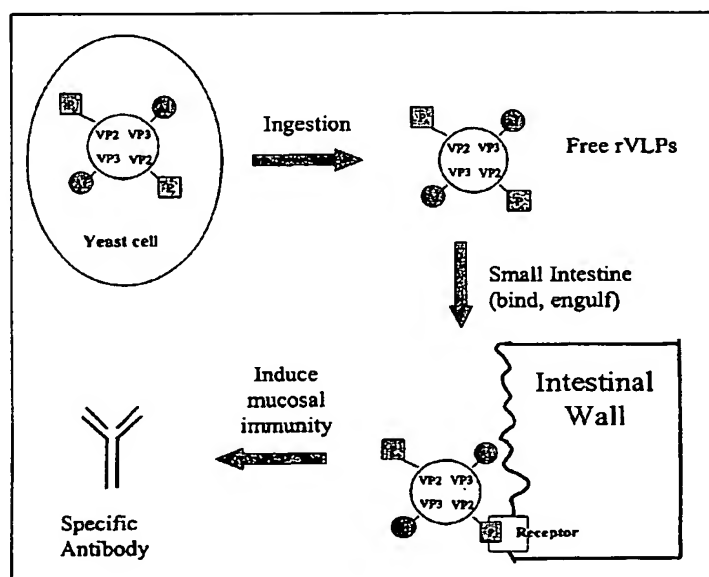
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(54) Title: VIRUSES AND VIRUS-LIKE PARTICLES FOR MULTIPLE ANTIGEN AND TARGET DISPLAY



(57) Abstract: The present invention relates to the display of antigenic or allergenic components along with a tissue-targeting component on viruses or virus-like particles. Capsid protein genes are recombinantly modified to contain the specified components, then expressed within a host organism, such as yeasts, bacteria, or algae, and allowed to spontaneously form active virus particles or virus-like particles. The recombinant complexes (virus or virus-like particle) can then be purified or used in situ as a therapeutic tool for disease or allergy prevention. The expression of multivalent and multifunctional components to increase the immunogenicity of the recombinant complexes, especially on oral administration, is provided.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/19855

**A. CLASSIFICATION OF SUBJECT MATTER**IPC(7) : A61K 48/00  
US CL : 424/93.1

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 424/93.1; 435/235.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Dialog**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,194,560 B1 (ARNTZEN et al.) 27 February 2001 (27.02.2001), abstract, column 8, lines 28-30 and 40-50, column 10, lines 29-38, column 11, lines 20-23 and 65-67, column 13, lines 3-8 and 52-59, column 14, lines 6-7, 14 and 19-23	1-10, 12-38, 40-45
Y		3, 11, 29, 39, 46
X	US 5,420,026 (PAYNE) 30 May 1995 (30.05.1995) column 3, lines 29-39	6, 7, 9, 10, 12, 13, 20, 27-36, 38, 40, 45, 47, 48
Y	AU 9228244 A (UNIV. MELBOURNE) 25 March 1993 (25.03.1993), page 2-3	3, 11, 29, 39, 46

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	
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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Tim Brown

Telephone No. (571) 272-0773